

Amendments to the Claims

1. (Currently Amended) A vulcanized automotive fluid-conveying tubular structure exhibiting heat tolerant, pressure resistant, hydrocarbon fluid impermeable characteristics, said tubular structure comprising:

about 30 to 75% of a matrix material consisting essentially of an ethylene-vinyl acetate a vinyl-ester copolymer matrix, wherein said ethylene-vinyl acetate vinyl-ester copolymer matrix contains greater than 40% vinyl acetate ester based on the weight of said ethylene-vinyl acetate copolymer; and

About 25 to 70% of one or more additives selected from the group consisting of process aids, fillers, plasticizers, metal oxides, metal hydroxides, peroxides, coagents, antioxidants and combinations thereof.

2. (Currently Amended) The tubular structure of claim 1 wherein said ethylene-vinyl acetate vinyl ester copolymer contains about 60 to 90% vinyl acetate ester based on the weight of said ethylene-vinyl acetate copolymer.

3-7 (Canceled)

8. (Currently Amended) The tubular structure of claim 1 wherein said composition comprises about 45 to 60% of said ethylene-vinyl acetate copolymer and about 40 to 55% of said one or more additives, said one or more additives comprising;

(a) about 0.8 to 2% process aid selected from the group consisting of stearic acid, stearates, polyethylene, amines, oils, organic esters, organic phosphate esters and combinations thereof;

(b) about 20 to 60% filler selected from the group consisting of carbon black, silicon dioxide, fumed silica, precipitated silica, diatomaceous earth, magnesium carbonate, magnesium silicate, aluminum silicate, titanium dioxide, talc, mica, aluminum sulfate, calcium sulfate, graphite, wollastonite, molybdenum disulfide, clay, calcium carbonate and combinations thereof;

(c) about 3 to 15% plasticizer selected from the group consisting of hydrocarbons, glycols, aldehydes, ethers, esters, ether-esters and combinations thereof;

(d) about 0 to 10% metal oxides and/or hydroxides selected from the group consisting of zinc oxide, zinc hydroxide, magnesium oxide, magnesium hydroxide, calcium oxide, calcium hydroxide, aluminum hydroxide and combinations thereof;

(e) about 0.5 to 2% peroxide selected from the group consisting of 2,5-dimethyl-2,5-di(t-butylperoxy)hexyne-3; 2,5-dimethyl-2,5-di(t-butylperoxy)hexane; α , α' -bis-(t-butylperoxy)-p-diisopropylbenzene; dicumyl peroxide; di-t-butyl peroxide; 1,1-bis(t-butylperoxy)-3,3,3-trimethylcyclohexane; 2,4-dichlorobenzoyl peroxide; benzoyl peroxide; p-chlorobenzoyl peroxide; 4,4-bis(t-butylperoxy) valerate; and combinations thereof; thereof;

(f) about 0 to 5% coagent selected from the group consisting of maleimides, triallyl cyanurate, triallyl isocyanurate, diallyl terephthalate, 1,2-vinyl polybutadiene, di- and tri-functional methacrylates, diacrylates, metal ion versions thereof and combinations thereof; and

(g) about 0 to 0.3% antioxidant selected from the group consisting of phenols, hydrocinnamates, hydroquinones, hydroquinolines, diphenylamines, mercaptobenzimidazoles, and combinations thereof.

9. (Currently Amended) The tubular structure of claim 1 wherein said tubular structure composition further comprises a polymeric material selected from the group consisting of ethylene-propylene-diene terpolymer (EPDM), styrene-butadiene rubber (SBR), acrylonitrile-butadiene rubber (NBR), ethylene-propylene rubber (EPR), butyl rubber, cis-polybutadiene, cis-polyisoprene, polyurethane, polyamide, and mixtures thereof.

10. (Currently Amended) A vulcanized automotive fluid-conveying tubular structure for conveying fluids in an automotive engine cooler, transmission oil cooler, power transmission cooler, radiator or heater, said vulcanized automotive fluid-conveying tubular structure comprising:

about 45 to 60% of a polymeric matrix material consisting essentially of an ethylene-vinyl acetate copolymer ~~matrix~~ having a vinyl acetate content of about 60 to 90% based on the weight

of said ethylene-vinyl acetate copolymer, and

~~about 40 to 55% of one or more additive, wherein said tubular structure comprising about 45 to 60% ethylene-vinyl acetate copolymer and about 40 to 55% of one or more additives, said additives comprising:~~

(a) about 0.8 to 2% process aid selected from the group consisting of stearic acid, stearates, polyethylene, amines, oils, organic esters, organic phosphate esters and combinations thereof;

(b) about 20 to 60% filler selected from the group consisting of carbon black, silicon dioxide, fumed silica, precipitated silica, diatomaceous earth, magnesium carbonate, magnesium silicate, aluminum silicate, titanium dioxide, talc, mica, aluminum sulfate, calcium sulfate, graphite, wollastonite, molybdenum disulfide, clay, calcium carbonate and combinations thereof;

(c) about 3 to 15% plasticizer selected from the group consisting of hydrocarbons, glycols, aldehydes, ethers, esters, ether-esters and combinations thereof;

(d) about 0 to 10% metal oxides and/or hydroxides selected from the group consisting of zinc oxide, zinc hydroxide, magnesium oxide, magnesium hydroxide, calcium oxide, calcium hydroxide, aluminum hydroxide and combinations thereof;

(e) about 0.5 to 2% peroxide selected from the group consisting of 2,5-dimethyl-2,5-di(t-butylperoxy)hexyne-3; 2,5-dimethyl-2,5-di(t-butylperoxy)hexane; α,α' -bis(t-butylperoxy)-p-diisopropylbenzene; dicumyl peroxide; di-t-butyl peroxide; 1,1-bis(t-butylperoxy)-3,3,3-trimethylcyclohexane; 2,4-dichlorobenzoyl peroxide; benzoyl peroxide; p-chlorobenzoyl peroxide; 4,4-bis(t-butylperoxy) valerate; and combinations thereof;

(f) about 0 to 5% coagent selected from the group consisting of maleimides, triallyl cyanurate, triallyl isocyanurate, diallyl terephthalate, 1,2-vinyl polybutadiene, di- and tri-functional methacrylates, diacrylates, metal ion versions thereof and combinations thereof; and

(g) about 0 to 0.3% antioxidant selected from the group consisting of phenols, hydrocinnamates, hydroquinones, hydroquinolines, diphenylamines, mercaptobenzimidazoles, and combinations thereof.

11-19 (Canceled)

20. (Currently Amended) In an automotive fluid-conveying tubular structure for conveying fluids in an automotive engine cooler, transmission oil cooler, power transmission cooler, radiator or heater, the improvement comprising employing as the tubular structure a vulcanized heat tolerant, pressure resistant, hydrocarbon fluid impermeable tubular structure composition, wherein said tubular structure composition comprises:

about 30 to 75% of a matrix material consisting essentially of an ethylene-vinyl acetate copolymer matrix, wherein said ethylene-vinyl acetate vinyl ester copolymer matrix having contains greater than 40% vinyl acetate ester based on the weight of said ethylene-vinyl acetate copolymer said vinyl acetate copolymer matrix having incorporated therein; and.

About 25 to 70% of one or more additives selected from the group consisting of process aids, fillers, plasticizers, metal oxides, metal hydroxides, peroxides, coagents, antioxidants and combinations thereof.

21 (Previously Presented) The tubular structure of claim1 wherein said tubular structure is a radiator hose.

22. (Previously Presented) The tubular structure of claim1 wherein said tubular structure is a heater hose.